HUGHES ELECTRONICS

March 18, 1996

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: CS Docket No. 95-184

Dear Mr. Caton:

Enclosed for filing in the above-referenced docket please find an original and nine copies of the Comments of DIRECTV, Inc.

Sincerely,

Steven J. Cox (mdd)

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of	)	
	)	
Telecommunications Services	)	CS Docket No. 95-184
Inside Wiring	)	
	)	
Customer Premises Equipment	)	

COMMENTS OF DIRECTV, INC.

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COMMENTS OF DIRECTV, INC.

DIRECTV, Inc. ("DIRECTV") hereby submits the following Comments in connection with the above-captioned Notice of Proposed Rulemaking.[1]

Introduction

DIRECTV supports the modification of the "inside wiring rules and policies in light of today's evolving and converging telecommunications marketplace."[2] Merely "making the cable home wiring rules the same as those governing telephone inside wiring",[3] however, does not effectively address the total problem. The cable and telephone wiring rules need to be harmonized in light of present and future competition from multiple video, telephone, and data service providers.

Cable and telephone companies are not the only service providers that are affected by these rules. The concerns of direct broadcast satellite ("DBS") companies should be considered

[1] In the Matter of Telecommunication Services Inside Wiring, Customer Premises Equipment, CS Docket No. 95-184, Notice of Proposed Rulemaking (released January 26, 1996) ("Notice").

[2] Notice ¶ 1.

[3] Id.

since DBS providers are, and will continue to be, important competitors in the telecommunications marketplace. The DBS viewpoint has the benefit of also providing insight into the possible needs of other wireless broadband systems, such as MMDS and LMDS.

The inside wiring issue is particularly important to ensure that DBS companies are able to provide effective competition to cable operators for residents of apartments, condominiums, and other multiple dwelling units ("MDUs"), roughly one-fourth of the United States' TV households. It is important to recognize the difference between MDU wiring plants and the delivery systems external to the MDU. While competition is encouraged by having multiple wired and wireless external delivery systems offering common services, competition is stifled by requiring redundant and unnecessary cables internal to MDUs. In MDUs, control of existing wiring plants provides a serious impediment to facilitating fair competition among service providers to the residents within individual units. The MDU owners and tenants are typically unreceptive to assuming the cost and inconvenience of overbuild installations, which causes an intractable barrier to entry for new service providers. In addition to being inconvenient and costly, overbuilds are also quite often unnecessary. Different suppliers are technically capable of sharing the existing wiring to deliver competitive services. The present concept of adding a wiring network throughout an MDU for every new, competitive service provider makes no sense and results in unnecessary costs being passed on to the public. To foster competition, existing wiring within MDUs needs to be available for different service providers, sometimes with multiple services sharing a single wire. Residents of MDUs will not have the freedom to choose among service providers unless a means of fairly and sensibly managing the wired infrastructures within MDU buildings is addressed.

DIRECTV, Inc. Background

DIRECTV, Inc., the nation's leading DBS service provider, delivers approximately 175 channels of digital-quality television programming to American homes and businesses that are equipped with the DSS® receiving unit, which features an 18-inch satellite dish. As recently announced, future services will include data and interactive applications.

The DSS system uses a satellite forward channel and a telephone return channel. The satellite forward channel must be wired from the outdoors unit (the dish and low-noise block converter). In a single family home this typically consists of a cable leading from the outdoors unit to the Integrated Receiver Decoder ("IRD"), *i.e.*, the set-top box. The frequency band used for today's systems is 950 - 1450 MHz, which does not conflict with the 54 - 860 MHz typically used for cable and off-air television or with the lower frequencies used for telephony. A DBS, cable, and telephone system could therefore share a common physical cable plant of the proper characteristics. For the DSS system, the telephone return channel uses a modem over common telephone lines and is used for low bandwidth, periodic communication of information.

For MDUs, any apartment or condominium unit that does not have access to a view of the satellite needs to use a cabling system within the MDU complex for the satellite forward channel. This is a more complex problem than the single family home solution, but there are reasonable technical solutions that could allow for distribution of the digital satellite forward channel using a small amount of bandwidth. It is quite feasible to use existing MDU cable plants for distribution of the competitive digital television, data, and interactive services of DIRECTV.

Addressing the Needs of Wireless Operators

"Wireless" operators, such as DBS, MMDS, LMDS, and terrestrial (UHF/VHF), are affected by inside wiring since the final carriage of the signal typically is "wired." For MDUs, where inside wiring can become quite complex and costly, consideration of the needs of wireless operators in conjunction with wired operators, such as cable and telephone, is paramount to facilitating competition among the service providers.

The two examples used in the Notice are cable and telephone, the predominant wired services within MDUs. For DBS providers to offer competitive services in MDUs, the DBS signal needs to be distributed throughout the MDUs to all units. The residents of all units will then have the option of selecting one competitor over another. There are two obvious solutions to the problem of DBS signal distribution: (1) overbuild the current cable plant with a redundant cable plant expressly for the DBS provider, or (2) reuse the existing cable plant.

In the Notice, the Commission has recognized that in this new telecommunications marketplace multiple services can and will be offered over a single set of wires.[4] Multiple providers are and will continue to be competing to provide these services. As the number of services offered increases, it is not cost effective or realistic to assume that each new service will be provided on a new inside wire. In order to foster competition for each service it follows that the new inside wiring rules should take into account situations where multiple providers including cable, telephone, and DBS use shared wiring.[5] Otherwise, only aggregate service providers could compete effectively in the MDU market. Absent modification, this situation will lead to an

[4] See Notice ¶¶ 2, 12.

[5] See Notice ¶ 63.

undesirable divergence of service offerings to individuals based on whether they live in single family homes or MDUs.

General Position

To allow DBS to compete effectively with cable television, the DBS provider needs access to the entire MDU cable plant, be it a single building or a cluster of buildings in a garden style apartment complex. The DBS provider must be able to reuse existing cable, or use a portion of the available bandwidth on the existing cable plant, to be able to compete effectively with the incumbent service provider without subjecting the landlord or tenants to unnecessary installation burdens. If the cable currently installed in an MDU is capable of delivering the DBS service and the residents wish to have the service, then the DBS provider should have the option of using a portion of the bandwidth or the entire bandwidth on the existing cable plant to deliver the competitive service. There are four possible scenarios that should be allowed for in order to facilitate competition in MDUs:

(1) The new service provider overbuilds all of the common portion of an MDU cable plant and then, on a subscriber-by-subscriber basis, takes over use of the existing cable dedicated to an individual subscriber if and when that subscriber selects the new provider's service over the incumbent operator's service. This works for the non-loop-through category of cable wiring configurations. The drawback of this approach is that the cost and inconvenience of the redundant, overbuilt cable plant backbone provides a serious barrier to entry for the new competitor and therefore creates an impediment to competition in the MDU.

(2) The new service provider places its signal onto an unused frequency band on the existing cable on a non-interference basis. For example, suppose that the existing system is capable of providing up to a 550 MHz signal to each unit. This system can handle about eighty 6 MHz channels. Also suppose the current service provider only delivers a 45 channel service to the MDU. A new competitive service provider should be able to deliver its service on as many of the unused 35 analog channels as are needed.[6] It should also have some means of aggregating the unused bandwidth into a contiguous frequency space to ease its ability to deliver the competitive service to the MDU residents in a cost-effective manner.

(3) The new service provider upgrades or facilitates the upgrade of an existing system so that it can support its signal. Suppose an MDU coaxial cable plant capable of supporting 550 MHz is fully utilized by an existing provider, and also that the residents demand the continuation of all of the services that occupy that 550 MHz system. In this case, a new service provider should be able to upgrade the 550 MHz system to a 750 MHz system and deliver the new competitive service on the additional 200 MHz of bandwidth.

(4) The new service provider is selected by the MDU residents, or the landlord, to replace their existing service provider. In this case, the new service provider needs to be able to use the entire existing cable plant. The new service provider would take over the use of the existing cable plant from the old service provider and use the system (*i.e.*,

[6] It is possible to deliver the nearly 200 digital channel programming services from DIRECTV, Inc. and United States Satellite Broadcasting Company, Inc. using less than this amount of spare bandwidth.

cables, amps, splitters, taps) in its entirety. If the previous service provider had an ownership interest in the existing cable plant, then it may be entitled to just compensation.

These scenarios raise a number of issues. What happens if you have multiple video providers, multiple telephony providers, and multiple data service providers? Suppose they, in aggregate, need two coaxial cables to carry all of the competitive services. How does one decide who gets which cable and which piece of spectrum on the cable? How does one ensure that service providers don't become merely squatters on bandwidth without bringing new and improved services to the consumers? The detailed comments that follow address many of these issues.

Detailed Comments

Demarcation Point

DIRECTV believes that the location of the demarcation point should be at the point that allows optimal reuse of existing broadband and narrowband cabling by competitive services to consumers in both single family homes and MDUs. Further, DIRECTV believes "that the current cable demarcation point may be impeding competition in the video services delivery marketplace."[7]

DIRECTV favors the establishment of two physical demarcation points: (1) one for single family homes and units of MDUs; and (2) one for MDUs as a whole. Moreover, the location of the point should not be defined in inches from a wall but instead as the nearest easily accessible point outside the single family home, unit or MDU that is dedicated exclusively to the provision of services to that single family home, unit or MDU.

[7] Notice ¶ 17.

For single family homes and for units within MDU buildings, the demarcation point should be located at the first point where physical wiring is dedicated to an individual subscriber. This is typically at the nearest point outside the home where a cable connection point is accessible. Note that for units within MDU buildings, this point is often at a lockbox that is dedicated to several units that are in close proximity and is significantly more than 12 inches from the individual unit. Establishing a demarcation point based on a measured distance from the wall of a unit would, more often than not, bury that point within a wall and make it quite inaccessible.

For MDUs there also should be a demarcation point between the common MDU wiring and the point where the service provider attaches to this common wiring. This demarcation point should be located at the first point where physical wiring is dedicated to the MDU wire plant. This point would typically be outside the MDU building or building cluster at a similarly convenient access point. This may be at the street or a pole for cable and telephone providers and at the satellite dish for DBS providers. A wire from this demarcation point would connect to the head-end of the MDU wiring plant. Any point along this wire that carries the provider's service to the head-end of the MDU wiring plant would be an acceptable demarcation point. This allows an entire existing wiring plant to be re-used or shared by a competitive service without undue burden. Without this additional demarcation point that treats the entire MDU cable plant as "inside wiring," significant barriers to entry for alternative service providers in MDU buildings will remain.

DIRECTV also supports the establishment of another demarcation point - - a "virtual" demarcation point. This virtual demarcation point is not a physical location where one service provider would attach its wire as a total replacement to another service provider. Instead, it

implies a sharing of available bandwidth on a single wire. This is the same concept that is used to share the airwaves between VHF stations, UHF stations and all of the other services that are available on the electromagnetic spectrum. A provision for sharing wires among service providers should be allowed for in the rulemaking. The actual demarcation (*i.e.*, the spectrum allocation) does not need to be written into the rules and can be worked out by service providers and subscribers on a case-by-case basis. It is technically possible for providers to share wires and if it is allowed for in the rules, then consumer demand will force competitors to work out these demarcation points among themselves.

Regarding the argument of cable operators that they should be permitted to maintain control over their wires,[8] DIRECTV urges the rethinking of the implied "inside wiring" and "service provider" one-to-one association.[9] The argument that the incumbent provider should have the right to retain wiring when a subscriber chooses to switch to a new video provider creates an undue barrier to the new service provider and provides no value to the consumer. The cable operators' argument that loss of control of the wire would restrict their ability to compete for telephone and Internet services can be answered by requiring sharing of the wiring. For example, on a 550 MHz cable plant, the incumbent video provider could attempt to market a voice and data service in the 5 to 30 MHz portion even though it relinquished (at the customer's insistence) the 54 - 380 MHz portion to a competitor's 50 channel video service.

The issue of compensation for wiring [10] will be different for each case. The cable operator

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[8] See Notice ¶ 11.

[9] The need for this disassociation is discussed in ¶ 63 of the Notice: ". . . in a world in which the cable operator, the telephone company and possibly others may be offering telephony, video and other services over a single wire."

[10] See Notice ¶ 13.

should only be compensated for the wire or wire plant (in an MDU) if it has not already charged, directly or indirectly, the customer for the wiring or wire plant. And if the wire is shared, then a portion of any unrecovered investment should be charged to the new service provider.

The Commission seeks comment on how the wiring rules can be structured to promote competition.[11] A key enabler of competition that is mentioned in the Notice is the recognition that *one does not need a wire for every service.*[12] It is DIRECTV's position that *one does not need a wire for every service provider*. This is the passkey to facilitating an ease of access between multiple service providers and prospective customers -- a necessary precursor to competition.

DIRECTV also recognizes the need to have the inside wiring rules provide appropriate solutions for all types of architectural settings in which subscribers might reside.[13] We believe that the terms we advocate allow enough flexibility for determination of an acceptable demarcation point by reasonable parties given the constraints of the particular MDU, be it a high rise, a cluster of high rises, a garden style cluster of buildings, a row-style condominium, a dormitory, a nursing home, or some other configuration of MDU.

Connections

DIRECTV agrees that signal and picture quality are important.[14] For digital video systems such as DIRECTV, a direct, gradual correlation between signal quality and picture quality no longer holds. As signal quality degrades the number of bit errors increases, but the use

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[11] See Notice ¶ 14.

[12] Id.

[13] See Notice ¶ 18.

[14] See Notice ¶ 21.

of error correction coding corrects these bit errors and a picture quality is recovered that matches the broadcasted digital picture quality. When the noise reaches a high enough level that the error correction codes can no longer be used to recover the correct digital data, the picture rapidly degrades. Properly designed digital modulation and error correction systems ensure that this threshold is not exceeded on a large percentage of existing cable plants.

The service providers should be responsible for ensuring signal integrity for their subscribers. This can be accomplished by ensuring proper connections for the portion of the system that they are in control of and by establishing guidelines for proper connections for the other portions of the system.

DIRECTV opposes the extension of cable signal quality standards to other broadband video signal providers.[15] We agree with the suggestion in the Notice that extension of these requirements is unnecessary because service integrity will be a competitive discriminator. Also, as described above, the signal quality metrics change dramatically as the system transitions from analog to digital transmission techniques.

Means of Connection

DIRECTV does not support the adoption of technical requirements for standard jacks and connectors.[16] While industry standardization is important, especially when multiple service providers will be sharing the same physical wiring network, DIRECTV believes that the industry should be left to work this problem out on its own to allow for responsiveness to evolving technology.

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[15] See Notice ¶ 25.

[16] See Notice ¶ 29.

Customer Access to Wiring and Compensation for Wiring

DIRECTV supports maximizing the right of each and every individual subscriber to choose who will provide each of their services on a service-by-service basis. The disposition of ownership and control of the inside wiring is very important in this regard.[17] The best way to achieve rapid competition is to make "a presumption that the subscriber owns his or her cable inside wiring"[18] and further that the collective MDU community, likewise, owns its common inside wiring. In most cases, DIRECTV believes that this presumption cannot be rebutted. In order to rebut the presumption, a cable operator should have to provide proof that they have not recovered the investment cost of the wiring and also show that the salvage value of the wiring exceeds the unrecovered investment cost.

In cases where the cable operator can rebut the presumption and demonstrate ownership rights, the subscriber or collective MDU community must have the right to purchase the inside wiring (or access thereto) prior to termination of the subscription. This subscriber right must be established because the rules need to allow for more than one service provider to use the same wires in order to facilitate competition for the individual services. Not allowing a purchase prior to termination would thwart the move to separate the "service provider" issue from the "inside wire" issue. Alternatively, assuming that there is significant value remaining and owned by the service provider, the competitive service provider that will begin to share the wire could co-invest by purchasing a portion of the unrecovered value of the wiring. Then, it is likely, the dual

[17] See Notice ¶ 43.

[18] Notice ¶ 48.

ownership would cause a more rapid progression to the point where the wiring could rightfully be presumed to be owned by the subscriber.

Dual Regulation

DIRECTV supports exclusive federal control of all inside wiring and MDU common wiring issues that require regulation. These systems do not use public rights of way and should not be regulated at the state or local level.

As local, regional and national service providers begin to compete to offer a variety of services to subscribers in single family homes and MDUs, an unambiguous rulemaking establishing a single point of regulation is of paramount importance. The demarcation points for the single family home and for the MDU (as a whole) provide a definition of inside wiring that does not need to cross the public right of way. As such, local, regional and state regulations do not apply to these points. Each service provider can deal with the appropriate regulations of these other entities as they relate to the delivery of their services to the respective demarcation points. Without this clarification, nationwide service providers, such as DBS providers, do not have a reasonable opportunity to provide competitive services, especially to MDU residents.

Service Provider Access to Private Property

DIRECTV supports the right of a subscriber to have ready access to services regardless of whether they own or rent.[19] For residents of single family homes that are rental properties and for residents of MDUs, this means that the right of access must be established. DIRECTV favors open access to the demarcation points. DIRECTV also supports the right of a service provider to install or upgrade the common wiring in an MDU. These rights should be presumed unless the

[19] See Notice ¶ 61.

landlords can demonstrate a reduction to their property value by allowing the exercise of these rights of access.

This issue will continue to become more important for renters as the types of services offered migrate from entertainment to services that have a broader impact on subscribers, such as telecommuting, or services that provide access to information, such as educational programs and news. Landlords should not have the ability to restrict tenants' access to such vital services.

Customer Premises Equipment

The Commission correctly states that today, cable set-top boxes are generally provided (and owned) by the cable operator.[20] This business model, however, is very much in flux as operators enter the digital age with more complex and powerful set-top boxes and begin to provide interfaces to personal computers and other customer premises equipment ("CPE"). DIRECTV expects both purchase and rental programs to be a part of the various business models for the industry. The subscriber's access to the communications network should not be restricted based on a vestige from the history of set-top boxes. Thus, DIRECTV agrees with the Commission's tentative conclusion "that Consumers should be able to connect cable-related equipment, as well as purchase this equipment."[21]

DIRECTV does not support the establishment of regulations concerning CPE.[22] A possible exception is that an individual consumer must not be allowed to connect a piece of equipment that creates a safety hazard or degrades the service of his or her neighbors. It is

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[20] See Notice ¶ 67.

[21] See Notice ¶ 72.

[22] See Notice ¶ 70.

anticipated that this can be accomplished without undue regulation of CPE. Moreover, DIRECTV believes that the market will decide the value of backward-compatibility and this does not require regulation.

The issue of signal theft for new services will not be controlled solely by restricting physical connections to the network. It will be controlled primarily by using encryption. The control point to guard against theft is access to the keys to decode the encrypted data. There are federal laws that establish penalties for unauthorized signal theft[23] and regulation of CPE is not the place to further such safeguards. Finally, DIRECTV does not support the establishment of a standard for an equipment registration program unless it can be shown that there is a legitimate safety issue that is best addressed in this fashion.

Conclusion

DIRECTV urges the Commission to adopt the proposals set forth in the foregoing Comments. In particular, the Commission should take into account the need for access by DBS service providers to inside wiring, including the common wiring inside MDUs.

Respectfully submitted,

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[23] See 47 U.S.C. § 605(e)(4).